IN THE CLAIMS

Please cancel claim 18.

Please amend claims 1, 17, and 19 as follows:

1. (Currently Amended) A random access memory device including a temperature sensing circuit, the temperature sensing circuit comprising:

a sensing device configured to hold a sensed voltage that varies with changes in temperature;

a temperature reference circuit having a plurality of reference voltages;

a switch circuit coupled to the temperature reference circuit;

a comparator having a first input, a second input, and an output, the comparator configured to receive the sensed voltage from the sensing device on its first input and configured to receive the reference voltages on its second input, and configured to produce comparison signals at its output;

first and second latches configured to latch and hold the comparison signals from the comparators; and

a control circuit coupled to switch circuit and to the first and second latches, wherein the control circuit controls the switch circuit such that reference voltages are selectively applied to the first input to the comparator and wherein the control circuit selectively controls the first and second ~~larches~~latches to hold the comparison signals.

2. (Original) The random access memory device of claim 1 further comprising a trimmer coupled to the first temperature reference circuit.

3. (Original) The random access memory device of claim 2 wherein the trimmer is adjustable to correct the reference voltages for input offset voltage in the comparator.

4. (Original) The random access memory device of claim 2 wherein the trimmer is a potentiometer with adjustable resistance to correct for input offset voltage in the comparator.

5. (Original) The random access memory device of claim 2 wherein the trimmer is multiple resistors that may be removed and added to the trimmer in order to provide adjustable resistance to correct for input offset voltage in the comparator.

6. (Original) A temperature sensing circuit comprising:

a comparator configured to receive a sense voltage that is indicative of a sensed temperature;

a temperature reference circuit coupled to the comparator, the temperature reference network having a plurality of reference voltages including at least a first and a second reference voltage; and

a control circuit coupled to the temperature reference circuit such that the control circuit controls alternately compares the plurality of reference voltages to the sense voltage, the control circuit further configured to receive a plurality of outputs from the comparator indicative of the comparisons of the plurality of the reference voltages to the sense voltage and wherein the control circuit determines when the sense voltage is between the first and the second reference voltages.

7. (Original) The temperature sensing circuit of claim 6 further comprising a trimmer coupled to the temperature reference circuit that is independently adjustable to adjust the plurality of reference voltages.

8. (Original) The temperature sensing circuit of claim 7 wherein the trimmer is a potentiometer with adjustable resistance to correct for input offset voltage in the comparator.

9. (Original) The temperature sensing circuit of claim 7 wherein trimmer is multiple resistors that may be removed and added to the trimmer in order to provide adjustable resistance to correct for input offset voltage in the comparator.

10. (Original) The temperature sensing circuit of claim 6 further including a sensing device configured to sense the sensed voltage that varies with changes in temperature at the sensing device and that provides the sensed voltage to a first input of the comparator.

11. (Original) The temperature sensing circuit of claim 10 further comprising a switch circuit coupled between the temperature reference circuit and a second input of the comparator and controlled by the control circuit such that the plurality of reference voltages are alternately applied to the second input and compared to the sense voltage by opening and closing switches in the switch network.

12. (Original) The temperature sensing circuit of claim 11 wherein the control circuit further comprises first and second latches coupled to an output of the comparator such that the first latch holds a first comparison signal representative a first comparison of the first reference voltage with the sense voltage and such that the second latch holds a second comparison signal representative a second comparison of the second reference voltage with the sense voltage.

13. (Original) The temperature sensing circuit of claim 12 wherein the control circuit receives the first and second comparison signal to determine whether the sense voltage is between the first and second reference voltage.

14. (Original) The temperature sensing circuit of claim 13 wherein the control circuit controls the switch circuit to alternately apply third and fourth reference voltages to the second input of the comparator and controls the first and second latches such that the first latch holds a third comparison signal representative a comparison of the third reference voltage with the sense

voltage and such that the second latch holds a fourth comparison signal representative a comparison of the fourth reference voltage with the sense voltage.

15. (Original) The temperature sensing circuit of claim 14 wherein the control circuit receives the third and fourth comparison signal to determine whether the sense voltage is between the third and fourth reference voltage.

16. (Original) The temperature sensing circuit of claim 6 configured in a random access memory device.

17. (Currently Amended) A method of sensing temperature, the method comprising:

sensing the temperature of the semiconductor device with a temperature sensing circuit and producing a corresponding sensed temperature voltage;

providing the sensed temperature voltage to a single comparator;

providing a first reference voltage to the single comparator;

comparing the sensed temperature voltage with the first reference voltage to produce a first comparison result;

latching the first comparison result from the single comparator;

providing a second reference voltage to the single comparator;

comparing the sensed temperature voltage with the second reference voltage to produce a second comparison result; ~~and~~

latching the second comparison result from the single comparator; and

determining ~~form~~from the first and second latched comparison results whether the sensed temperature voltage is within the first and second reference voltages.

18. (Cancelled)

19. (Currently Amended) The method of claim ~~18~~17 further including adjusting the first and second reference voltages to balance any input offset voltage from the single comparator.

20. (Original) The method of claim 19 wherein the adjusting the first and second reference voltages is done with a trimmer.

21. (Original) The method of claim 17 further including providing additional reference temperatures when the sensed temperature voltage is not between the first and second reference voltages.

22. (Original) A temperature sensing circuit comprising:

a comparator configured to receive a sense voltage that is indicative of a sensed temperature;

switch means coupled to the first comparator for alternately comparing a first and second reference voltages with the sense voltage to produce first and second comparison results;

latch means coupled to the comparator for holding first and second comparison results; and

control means for determining from the first and second comparison results whether the sense voltage is between first and second reference voltages.

23. (Original) The temperature sensing circuit of claim 22 further comprising a reference network for providing the first and second reference voltages.

24. (Original) The temperature sensing circuit of claim 23 further comprising trimmer means coupled to the reference network for independently adjusting the first and second reference voltages.